

(3) Amendments to the Claims

1. (Currently amended) Device (10) for the automatic separation of the solid and liquid phase of a suspension (78) and for purifying magnetic microparticles (76) loaded with organic, ~~in particular molecular biological or biochemical~~ substances, which device (10) comprises a process area (12) ~~with mechanisms which move in a cyclic manner for transporting the magnetic microparticles (76) in the x-direction, characterized in that, and a~~ first guide (14) which is arranged for supplying sample containers (P) with magnetic microparticles in the x-direction to the process area (12) and a second guides guide (18) are which is arranged for supplying reagent containers (R) in the y-direction to the process area (12) and ejection of the reagent containers in the same direction into a waste collector, wherein the second guides guide (18) extends extend in the y-direction at an angle (α) of 30 to 150° to the x-direction, and additionally, the device comprises a carrier element (24), which can be moved back and forth in a cyclic manner in the x-direction, which carrier element comprises several carrier plates (24a, 24b, 24c) which that can be lifted and lowered individually in the z-direction, individually and together, running essentially perpendicular to the x- and y-direction, and wherein at least one of the carrier plates carries a plurality of for magnetic or magnetisable transfer elements (28) which are arranged in a grid-like manner matrix shape, whereby, by lowering the at least one carrier plate, the transfer elements can be lowered in z-direction into sample containers or reagent containers for magnetically attaching magnetic microparticles located in said containers and after lifting the transfer elements in z-direction, transporting the magnetic microparticles attached to the transfer elements in x-direction by movement of the carrier element, and after lowering the transfer elements in z-direction into further reagent containers releasing the magnetic microparticles attached to the transfer elements into the further reagent containers, the reagent containers (R) can be whereby the reagent containers are positioned according to the grid of the transfer elements (28) by introduction, taking place at an angle (α), into the process area (12) and can be rejected by ejection in the same direction into a waste collector.

2. (Currently amended) Device (10) according to claim 1, ~~characterized in that~~ wherein the transfer elements (28) are configured as ~~preferably~~ rod-shaped permanent magnets or electromagnets.
3. (Currently amended) Device according to claim 1 or 2, ~~characterized in that the~~ wherein a lowermost part of the transfer elements (28) dipping entering into the sample containers (P) and or reagent containers (R) when lowering the transfer elements in z-direction is covered by a tubular or beaker-shaped membrane (M) which can be lifted and lowered, can be deposited attached to the transfer elements and taken off from the transfer elements by means of a relative movement in the z-direction with respect to the transfer elements (28) and is preferably tubular or beaker shaped.
4. (Currently amended) Device (10) according to ~~any one of claims 1 to 3, characterized in that claim 1, wherein~~ the angle (α) between x- and y-direction is 90°.
5. (Currently amended) Device according to ~~any one of the claims 1 to 4, characterized in that claim 3, wherein~~ the relative movement of a transfer element (28) to the corresponding membrane (M), in the ~~longitudinal~~ z-direction (z) thereof, takes place by means of different lifting or lowering of ~~corresponding the~~ carrier plates (24b, 24c) and of membranes (M).
6. (Currently amended) Device (10) according to ~~any one of the claims 1 to 5, characterized in that claim 1, wherein~~ a third guide is arranged for continuously supplying the membranes (M) at an angle (β) of 60 to 120° with respect to the x-direction.
7. (Currently amended) Device (10) according to ~~any of the claims 1 to 6, characterized in that claim 1, wherein~~ a carrier block (46) with channels (48) for guiding the reagent containers (R) is arranged in the process area (12), which channels extend perpendicularly to the x-direction, is arranged in the process area (12) and each of the channels has have two horizontal grooves (66) in the side walls (47) which are opposing at the same level and open on the end face.

8. (Currently amended) Device (10) according to claim ~~6~~, ~~characterized in that~~ 7, wherein beams (72) which can be displaced horizontally back and forth, comprising permanent magnets (74) arranged in the region of the lowerable transfer elements (28), are arranged in recesses (50) extending parallel to the channels (48), to resuspend and mix the microparticles (76).
9. (Currently amended) ~~Device (10) according to claim 1 further comprising sample~~ Sample and reagent containers (P, R) and membranes (M) ~~for use in a device (10) according to any of the claims 1 to 8, characterized in that they~~ which are configured as substantially strip-shaped, stackable cassettes with a plurality of beaker-shaped cavities (22, 36) corresponding to the grid of the transfer elements (28) in the carrier element (24).
10. (Currently amended) ~~Sample and reagent container (P, R) according to claim 9, characterized in that the preferably~~ Device (10) according to claim 9 wherein the sample ~~and reagent containers feature six to ten cavities (22) are preferably with~~ flat or oval in cross-sections, ~~and wherein their~~ and wherein their cross-sectional internal diameters ~~of the sample and reagent containers are preferably being only a little~~ of the sample and reagent containers are preferably being only a little larger than the corresponding dimensions of the transfer elements (28) ~~or the~~ with pulled-on membranes (M).
11. (Currently amended) Method for automatically separating the solid and liquid phase of a suspension and purifying the solid phase ~~comprising with~~ comprising with a device (10), sample containers (P) and reagent containers (R) according to ~~any one of claims 1 to 10, characterized in that the claim 1 wherein a~~ forward movement of the carrier element (24) in the x-direction takes the place with the use of permanent magnetic rods as transfer elements (28) with loaded, pulled-up membranes (M) or with the use of rod-shaped electromagnets with ~~the~~ an electric current switched on, and ~~the a~~ backward movement counter to the x-direction takes place with the use of permanent magnetic rods as transfer elements (28) without membranes (M) or with the use of rod-shaped electromagnets with the electric current switched off.

12. (Currently amended) Method according to claim 11, ~~characterized in that~~ wherein the filled sample containers (P) are firstly guided intermittently or continuously on the longitudinal side in the x-direction and the reagent containers (R) with different or at most partially the same fillings are guided continuously in the y-direction and the end face to the process area (12), on each initiation of a new operating cycle, one membrane (M) in each case is put over the rearmost transfer elements (28) in the x-direction, the latter are lowered into the sample container (P) disposed at the process area (12) and, after attachment of the magnetic microparticles (76) to the membrane (M), the transfer elements (28) with the membrane (M) are raised from the suspension liquids, the carrier element (24) is displaced forward in the x-direction by a grid unit, corresponding to the spacing (a) between two reagent containers (R), the particle-free sample container (P) is ejected into a waste container, the filled reagent containers (R) are simultaneously introduced into the process area (12), the carrier element (24) with the transfer elements (28) are pulled up of the membranes (M), the attached magnetic microparticles (76) are resuspended, the suspension (78) mixed, the transfer element returned by the spacing (a) counter to the x-direction, while the membranes (M) remain in their position.
13. (Currently amended) Method according to claim 11 or 12, ~~characterized in that~~ wherein upon each movement of the carrier element (24) in the x-direction, the membranes (M) are entrained by one grid unit and are ejected at the end of the process area (12) into a waste collector.
14. (Currently amended) Method according to ~~any one of claims 11 to 13,~~ characterized in that claim 11, wherein the last reagent container (R) in the x-direction, which is ejected from the process area (12), is supplied for a further use.
15. (Currently amended) Method according to ~~any one of claims 11 to 14,~~ characterized in that claim 11, wherein a working cycle lasts 2 to 4 min.

16. (Currently amended) Method according to ~~any one of claims 11 to 15, characterized in that~~ claim 11, wherein the reagent containers (R) are used with different reagents, but with the same reagent in all the cavities (22) of the same reagent container (R).